NOTES FROM 02.23.05 PROTON DRIVER MEETING - CIVIL

Attendees: Bill Foster, Fernanda Garcia, Rich Stanek, Dixon Bogert, Rod Walton, Chuck Federowicz, Mike May, Duane Plant, Ed Crumpley

Items discussed:

1. Accessway for installing equipment with new building, hatch and crane: Mike had laid out arc accessway tunnel iteratively.
    a. Need 500 ft radius for equipment anticipated, which = 600 ft long tunnel
    b. Tried "Y" instead, with removable shield door. This was put on site plan
    c. Dixon also laid out an "S" curve with some layer of shielding. This was also put on a site plan. To do this would require a shielding decision – Dixon trying to get this from Nancy Grossman.
    d. Discussed operational scenarios for timing and logistics – determined might be able to replace magnets in transfer line from MI-8.
2. Front end building if accessway is used – what function does it serve?
    a. Eliminates hatch – but leaves a large elevator
    b. Total area of tech space + underground tech space should be similar to SNS tech space or MI31 with no crane or high bay
    c. Conclusion: building will still be necessary with elevator for loading in equipment. Size of tech space as bump on gallery building to be determined.
3. Linac space requirements: Mike presented photos and sections from SNS installation to show how things are situated there. Further discussion on what size "basement" of front end building should be. Need to understand what RFQ from Japan looks like and how much support equipment it will require.
4. Linac enclosure height: what is optimum elevation for cryomodule?
    a. Several different cryomodules shown, with differing access requirements.
    b. To solve size problem – keep beam height at MI, which is good for TESLA cavities. This might imply sloping floor upstream of these cavities, sloping down 2 ft. More information needed about what comes out bottom of the cavities.
    c. Some concern over too much space below equipment in tunnel might cause people to want to fill it up with pipes – a bad idea.
5. Cross-section updating with equipment:
    a. Mike starting to lay in things that are known on 2-D section
    b. Rich will talk to Tom Nicols about the cryomodules
    c. Is mechanical space needed in tunnel? SNS has this.
6. Discussion of air quality in tunnel:
    a. Dixon related experience from MI/NuMI where it was damp during installation.
    b. All concluded dryer air being put into tunnel might be better. Therefore, Mike will reserve space for a duct in the cross-section
    c. Elaine and Dixon will talk with Lee Hammond of FESS/E about what might be required.
7. Crossing of beamline to back aisle. Concerns are:
    a. What is code permitted height? 6'-8"?
    b. Is there a gap between equipment that could be used? It appears not.
    c. What is back aisle classified as? Need to do analysis.
    d. Might be able to put a ship's ladder at some spots if there's headroom.
8. Environmental:
    a. Rod said he talked with an environmental firm who could do a wetland determination (not delineation) for about $5k. This is a planning estimation of where wetlands are. (delineation is physically putting stakes in the ground). This is only good for 3 years.
    b. But what really matters is visit in May from Corps of Engineers and subsequent letter from them saying whether there are jurisdictional wetlands on site – we think not. If Yes, then will need to delineate and permit. If No, then nothing further required for wetlands.
    c. Jurisdictional is when the wetlands are connected to waters of the state – this definition seems to be fluid.
9. Soil Borings: since alignment not final, structural borings not appropriate yet. Rotosonic borings could be done to look at groundwater issues for a general alignment position. Elaine will get proposal from Paul Kesich.
10. What would cause change in alignment?
    a. CHL reuse might, although using existing headers around MR would allow current alignment to remain
    b. Bad soil conditions for groundwater might be an influence

c. Future physics considerations- already showed current alignment is a good fit for that.
d. Might also have preference of new director – this is an unknown.
e. Conclusion is that current alignment is not likely to change drastically.

11. Discussed review upcoming and how to include schedule – concluded don't say much.

ITEMS FOR NEXT MEETING:

1. Elaine to try to have Lee attend to discuss tunnel ventilation.
2. Mike to continue on cross-section development

NEXT MEETING 3/2/05 AT 9:30 A.M. IN THE conFESSional WH5NE